

# SCOTT TOWNSHIP PARK POND

## 2004 Fish Management Report

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Vanderburgh County

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## INTRODUCTION

Scott Township Park Pond is a 1.5-acre impoundment located in northern Vanderburgh County. The Civilian Conservation Corps built the lake in the 1930's. The park has a picnic area, children's play area, shelter house, and several nature trails. Much of the shoreline can be fished easily from the bank and a handicap accessible fishing pier is scheduled to be built. Access to the park and lake is available free of charge to the public. A valid Indiana fishing license is required to fish in the pond.

Past fish stockings include 10 triploid grass carp in the fall of 2003 to control excessive vegetation and 135, 12 to 14 inch channel catfish in the fall of 2004 by the park board. A 14-inch minimum length limit is in effect for the harvest of largemouth bass. No previous fisheries surveys have been conducted by the Division of Fish and Wildlife (DFW).

The current spot check survey was conducted on June 30, 2004 to assess the fish community. An aquatic vegetation survey was conducted on July 28.

Temperature and dissolved oxygen profiles, turbidity, alkalinity, conductivity, and pH data were collected as per standard lake survey procedures. Fish collection effort consisted of 0.24 hour of pulsed D.C. night electrofishing. Two individuals collected fish stunned by the electrofishing boat. The aquatic vegetation survey was conducted as described by Pearson 2004.

## RESULTS AND DISCUSSION

Water chemistry data were standard for a southwest Indiana lake. Oxygen was sufficient for fish survival to a depth of 6 feet. Turbidity was high as indicated by a secchi disk reading of 2 feet during the fish management survey and the vegetation survey.

Twenty sites were sampled during the vegetation survey. Filamentous algae was present at 42% of the littoral sites sampled. No other submersed aquatic vegetation was collected. Watershield covered approximately 15% of the lake surface. Other species observed were blunt spikerush, creeping water primrose, and soft rush.

A total of 143 fish, representing four species was collected that weighed 20.51 pounds. Bluegill were most abundant by number followed by largemouth bass. Other species sampled were warmouth and grass carp.

One-hundred-and-five bluegill were collected that weighed 5.76 pounds. They ranged in length from 0.9 to 8.7 inches and averaged 3.6 inches. Bluegill were the most abundant species collected by number (73.4%) and ranked second by weight (28.1%). Back-calculated lengths indicate bluegill are reaching harvestable size (6 inches) in four years. Nearly 10% of the bluegill collected were considered harvestable. All ages exhibited average growth when compared to district averages. The bluegill electrofishing catch rate was 430.3 per hour.

The bluegill PSD index value was 16. A bluegill PSD of 20-60 is considered indicative of a balanced fishery (Anderson and Neumann 1996). The low PSD value indicates a slightly higher proportion of 3 to 6 inch bluegill than what is recommended for a balanced population. The bluegill RSD7 was 8 and RSD8 was 7.

The bluegill fishing potential (BGFP) index classified the lake as having "good" bluegill fishing with an index score of 20 out of a possible 40 (Ball and Tousignant 1996). The high RSD8 value is the reason for the "good" rating. Three of the four parameters (density, growth, and PSD) were considered average or "fair".

A total of 31 largemouth bass was collected that weighed 12.12 pounds. They ranged in length from 1.8 to 18.2 inches. Largemouth bass ranked second in abundance by number (21.7%), and were the dominant species by weight (59.1%). Growth was average for ages 1 through 3. The bass electrofishing catch rate was 127.0 per hour.

The bass PSD index value was 17. A largemouth bass PSD of 40-70 is considered indicative of a balanced fishery (Anderson and Neumann 1996). The low PSD value indicates a higher proportion of individuals that are 8 to 12 inches in length than what is preferred. The largemouth bass RSD14 was 6. Only one fish was collected that exceeded 14 inches in length.

Other species collected were six warmouth and one grass carp.

## CONCLUSIONS AND RECOMMENDATIONS

Scott Township Park Pond provides good fishing for bluegill and catch and release fishing for bass. Bluegill were collected up to 8.7 inches in length. The largest bass collected was 18.2 inches, which weighed an estimated 3.05 pounds.

The bluegill population is currently in good shape according to relative abundance, growth, and the BGFP index. Bluegill are multiple spawners and their reproductive success is typically high enough to provide a sufficient food source for bass and also provide enough individuals for harvest. To help maintain a good bluegill fishery, harvesting is encouraged.

The largemouth bass PSD was below the recommended range. With average growth and sufficient prey availability, the number of bass over 12 inches should increase. The 14-inch largemouth bass minimum length limit should remain in effect.

The 15% surface coverage of watershield provides ample cover for bluegill to evade predation. For this reason no further vegetation control is necessary at this time for

management of the fishery. The absence of submersed plants is due to grass carp. Until the grass carp die or are removed it is unlikely that aquatic plants other than watershield will become established. Watershield is not a preferred food source for grass carp. In the future, if the park operators feel that vegetation is interfering with angling opportunities, they should contact the district fisheries biologist before any control is attempted. An aquatic vegetation control permit is required for future herbicide applications. The permit can be obtained from the district fisheries biologist.

The channel catfish stocked after the survey will provide additional fishing opportunities. Generally, channel catfish do not have a good reproductive success rate in a pond due to lack of spawning habitat and predation from largemouth bass on young-of-the-year catfish. For this reason it is necessary to continually stock channel catfish to establish and maintain a good population for harvesting. The DFW should stock 150 (50/acre), 8 to 10 inch channel catfish every two years beginning in 2006. Also, the DFW should stock 375 redear sunfish fingerlings. No redear were sampled during the fisheries survey. No other stocking of fish by other parties should occur without consultation with the district fisheries biologist and before obtaining a permit from the DFW.

#### LITERATURE CITED

- Anderson, R. O. and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-481 in B. R. Murphy and D. W. Willis, editors. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.
- Ball, R.L. and J.N. Tousignant. 1996. The development of an objective rating system to assess bluegill fishing in lakes and ponds. Research report. Indiana Department of Natural Resources. Indianapolis, Indiana. 18 pp.
- Pearson, J. 2004. A proposed sampling method to assess occurrence, abundance and distribution of submersed aquatic plants in Indiana lakes. Indiana Department of Natural Resources, Indianapolis, IN. 37 pp.

Submitted by: Jason C. Doll, Assistant Fisheries Biologist  
Date: January 6, 2005

Approved by: Daniel P. Carnahan, Fisheries Biologist

Approved by: \_\_\_\_\_  
Brian M. Schoenung, Fisheries Supervisor  
Date: March 17, 2005

<b>LAKE SURVEY REPORT</b>			Type of Survey		
			<input checked="" type="checkbox"/> Initial Survey <input type="checkbox"/> Re-Survey		
Lake Name			County		Date of survey (Month, day, year)
Scott Township Park Pond			Vanderburgh		June 30, 2004
Biologist's name					Date of approval (Month, day, year)
Jason C. Doll					March 17, 2005
<b>LOCATION</b>					
Quadrangle Name			Range		Section
Evansville North			10W		3
Township Name			Nearest Town		
5S			Inglefield		
<b>ACCESSIBILITY</b>					
State owned public access site			Privately owned public access site		Other access site
			Township park lake-No boat ramp		
Surface acres	Maximum depth	Average depth	Acre feet	Water level	Extreme fluctuations
1.5	21.0	7.0	10.5		none
Location of benchmark					
SE ¼, SE¼, S9, T5S, R10W					
<b>INLETS</b>					
Name		Location		Origin	
				Surface runoff	
<b>OUTLETS</b>					
Name		Location			
Water level control					
Overflow pipe located at the north end of dam					
<b>POOL</b>	<b>ELEVATION (Feet MSL)</b>	<b>ACRES</b>		<b>Bottom type</b>	
TOP OF DAM				<input type="checkbox"/>	Bolder
TOP OF FLOOD CONTROL POOL				<input type="checkbox"/>	Gravel
TOP OF CONSERVATION POOL				<input type="checkbox"/>	Sand
TOP OF MINIMUM POOL				<input checked="" type="checkbox"/>	Muck
STREAMBED				<input checked="" type="checkbox"/>	Clay
				<input type="checkbox"/>	Marl
Watershed use					
1/4 park, 3/4 forested					
Development of shoreline					
None					
Previous surveys and investigations					
None					

SAMPLING EFFORT									
ELECTROFISHING	Day hours			Night hours			Total hours		
				0.24			0.24		
TRAP NETS	Number of traps			Number of Lifts			Total effort		
GILL NETS	Number of nets			Number of Lifts			Total effort		
ROTENONE	Gallons	ppm	Acre Feet Treated	SHORELINE SEINING			Number of 100 Foot Seine Hauls		
PHYSICAL AND CHEMICAL CHARACTERISTICS									
Color				Turbidity					
Clear				2 Feet		0 Inches (SECCHI DISK)			
Alkalinity (ppm)*				pH					
Surface: 34.2		Bottom: 68.4		Surface: 7.29		Bottom: 6.96			
Conductivity:		67 microsiemens		Air temperature:		70.2 °F			
Water chemistry GPS coordinates:				N 38.1116		W -87.5185			
TEMPERATURE AND DISSOLVED OXYGEN (D.O.)									
DEPTH (FEET)	DEGREES (F)	D.O. (ppm)	DEPTH (FEET)	DEGREES (F)	D.O. (ppm)	DEPTH (FEET)	DEGREES (F)	D.O. (ppm)	
SURFACE	75.6	8.4	36			72			
2	75.2	8.3	38			74			
4	75.0	8.3	40			76			
6	74.8	7.2	42			78			
8	72.0	0.7	44			80			
10	62.2	0.6	46			82			
12	56.8	0.5	48			84			
14	53.1	0.6	50			86			
16	49.6	0.4	52			88			
18	48.2	0.4	54			90			
20	47.7	0.4	56			92			
22			58			94			
24			60			96			
26			62			98			
28			64			100			
30			66						
32			68						
34			70						
COMMENTS									
*ppm-parts per million									

[illegible]





NUMBER, PERCENTAGE, WEIGHT, AND AGE OF BLUEGILL									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0	2	1.9	0.01	0	19.0				
1.5	3	2.9	0.01	1	19.5				
2.0	15	14.3	0.01	1	20.0				
2.5	21	20.0	0.01	1	20.5				
3.0	15	14.3	0.02	2	21.0				
3.5	10	9.5	0.03	2	21.5				
4.0	14	13.3	0.04	2,3	22.0				
4.5	2	1.9	0.06	3	22.5				
5.0	10	9.5	0.08	3	23.0				
5.5	1	1.0	0.11	3	23.5				
6.0	3	2.9	0.15	4	24.0				
6.5	4	3.8	0.20	5	24.5				
7.0	1	1.0	0.26	6	25.0				
7.5					25.5				
8.0	2	1.9	0.38	6	26.0				
8.5	2	1.9	0.46	6,7	TOTAL	105			
9.0									
9.5									
10.0									
10.5									
11.0									
11.5									
12.0									
12.5									
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									
ELECTROFISHING CATCH		430.3/hr		GILL NET CATCH	N/A		TRAP NET CATCH		N/A

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF LARGEMOUTH BASS									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5				
2.0	2	6.5	0.01	0	20.0				
2.5					20.5				
3.0	1	3.2	0.02	0	21.0				
3.5					21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0				
5.5					23.5				
6.0	3	9.7	0.09	1	24.0				
6.5	5	16.1	0.12	1	24.5				
7.0	1	3.2	0.15	1	25.0				
7.5	1	3.2	0.18	2	25.5				
8.0					26.0				
8.5	1	3.2	0.26	2	TOTAL	31			
9.0	7	22.6	0.31	2					
9.5	2	6.5	0.36	2					
10.0	1	3.2	0.43	3					
10.5	1	3.2	0.50	3					
11.0									
11.5									
12.0	5	16.1	0.75	4,5					
12.5									
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0	1	3.2	3.05	not aged					
18.5									
ELECTROFISHING CATCH		127.0/hr		GILL NET CATCH	N/A		TRAP NET CATCH		N/A

Species	YEAR	NUMBER OF	SIZE	BACK CALCULATED LENGTH (inches) AT EACH AGE							
Bluegill	CLASS	FISH AGED	RANGE	I	II	III	IV	V	VI	VII	VIII
Intercept= 0.8	2003	11	1.6 - 2.7	1.4							
	2002	11	2.8 - 3.9	1.4	2.4						
	2001	14	3.6 - 5.3	1.4	2.5	3.7					
	2000	3	5.8 - 6.0	1.5	3.1	4.5	5.4				
	1999	4	6.3 - 6.7	1.5	3.1	4.5	5.7	6.2			
	1998	4	7.2 - 8.4	1.7	3.7	5.8	6.9	7.5	7.8		
	1997*	1	8.7	2.1	3.7	5.4	6.5	7.1	7.9	8.4	
	AVERAGE LENGTH			1.5	2.9	4.6	6.0	6.9	7.8		
	NUMBER AGED			47	36	25	11	8	4		
Species	YEAR	NUMBER OF	SIZE	BACK CALCULATED LENGTH (inches) AT EACH AGE							
Largemouth bass	CLASS	FISH AGED	RANGE	I	II	III	IV	V	VI	VII	VIII
Intercept= 0.8	2003	9	6.1 - 7.0	4.3							
	2002	11	7.4 - 9.3	3.6	7.6						
	2001	5	10.1 - 11.9	4.3	7.9	10.4					
	2000*	2	12.0 - 12.2	4.4	8.0	10.0	11.0				
	AVERAGE LENGTH			4.1	7.8	10.4					
	NUMBER AGED			25	16	5					

\*Not included in average length calculations.

GPS LOCATION OF SAMPLING EQUIPMENT											
GILL NETS				TRAP NETS				ELECTROFISHING			
1	N		W		1	N		W		1	N 38.1120 W -87.5187
	N		W		2	N		W		1	N 38.1120 W -87.5187
2	N		W		3	N		W		2	N W
	N		W		4	N		W		2	N W
3	N		W		5	N		W		3	N W
	N		W		6	N		W		3	N W
4	N		W		7	N		W		4	N W
	N		W		8	N		W		4	N W
5	N		W		9	N		W		5	N W
	N		W		10	N		W		5	N W
6	N		W		11	N		W		6	N W
	N		W		12	N		W		6	N W
7	N		W		13	N		W		7	N W
	N		W		14	N		W		7	N W
8	N		W		15	N		W		8	N W
	N		W		16	N		W		8	N W
9	N		W		17	N		W		9	N W
	N		W		18	N		W		9	N W
10	N		W		19	N		W		10	N W
	N		W		20	N		W		10	N W
11	N		W							11	N W
	N		W							11	N W
12	N		W							12	N W
	N		W							12	N W
13	N		W							13	N W
	N		W							13	N W
14	N		W							14	N W
	N		W							14	N W
15	N		W							15	N W
	N		W							15	N W
16	N		W							16	N W
	N		W							16	N W
17	N		W							17	N W
	N		W							17	N W
18	N		W							18	N W
	N		W							18	N W
19	N		W							19	N W
	N		W							19	N W
20	N		W							20	N W
	N		W							20	N W